

REMARKS

Claim Rejections Under 35 U.S.C. §103

1. In the Office Action, claims 1-3, 9-12, 14 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,448,994 (“Iinuma”) and further in view of U.S. Pat. No. 4,646,756 (“Watmough et al.”). This rejection is respectively traversed based on the following remarks.

Anderson et al. disclose a lightweight system for use in a system employing a multiplicity of focused acoustic transducers, column 1, lines 6-8. Each transducer has its own Fresnel lens, column 1, lines 38-39. The Fresenel lenses 12 are used to focus the energy from all of the acoustic transducers 14 toward a single focal point or target in order to heat the target, see Fig. 2, column 1, lines 11-13 and column 2, lines 3-4. Each lens must be precisely positioned relative to the transducers and relative to each other in order to achieve the desired focusing effect, see column 1, lines 15-17. Each lens can have a small prism section to achieve the best aim toward the target. With such prisms, lenses closest to the axis of symmetry have thinner prisms and those furthest away from the axis have the thickest prisms, see column 2, lines 3-7.

Iinuma discloses a system including a concave transducer element divided into a plurality of partial transducers a1-a12 and b1-b8, see Fig. 7, and a driving control means for driving/controlling the plurality of partial transducers to selectively generate high-energy ultrasonic waves for medical treatment and ultrasonic waves for non-treatment, see column 3, lines 31-35 and column 5, lines 46-48. The plurality of partial transducers are arranged to form a single focal point, see Figs. 8 and 11, and column 2, lines 33-35. Iinuma discloses a stone disintegration apparatus wherein the concave transducer 10 is driven by a pulser 22 to emit a strong ultrasonic pulse (shock wave) or a weak ultrasonic pulse, see column 5, lines 46-48. The pulsers 22, constituting the driving system 20, drive the respective partial transducers (a1-b8). The controller 64 supplies signals for controlling outputs from the pulsers 22, thereby controlling the output pulses from the transducer 10, wherein the output pulses are a strong output pulse, an intermediate output pulse and a weak output pulse, see column 6, lines 21-37. Iinuma further discloses a hyperthermia apparatus wherein the pulsers 22, constituting the driving system in the stone disintegration apparatus, are replaced by continuous wave generation drivers 24. The

hyperthermia apparatus is designed to radiate a continuous wave or a burst wave, see column 10, lines 62-68.

Watmough et al. discloses an ultrasound hyperthermia unit including ultrasound transducer means angled to direct sonic energy towards an acoustic focus, see column 1, lines 50-53. The system may be motorized to move the focus throughout the tumor volume, see column 2, lines 6-8. Watmough et al. also discloses a method for the controlled treatment of necrosed tissue by ultrasound hyperthermia which comprises focusing acoustic energy to a focal point within necrosed tissue, see column 4, lines 5-8. The sonic beam 12 generated from the transducer 1 is beamed toward target 3. All six other sonic transducers are also beamed toward the target 3 and the temperature rise occasioned thereby is cumulative, see column 5, lines 43-46. A desired rise in temperature occurs only at the point of acoustic focus, see column 5, lines 49-51.

Anderson et al., Iinuma and Watmough et al. all teach the focusing of a plurality of transducer elements to a single focal point. Anderson et al., Iinuma and Watmough et al. together fail to teach that each transducer element is focused to individually separate and distinct focal points. The references together teach that each transducer is individually focused so that an overall single focal point occurs. A §103 rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference is not proper and the *prima facie* case of obviousness cannot be properly made. In short there would be no motivation for engaging in the modification or change. Watmough et al. discloses that the seven transducers are all beamed toward a single target and that the temperature rise occasioned thereby is cumulative and that the desired temperature rise occurs only at the point of acoustic focus. Focusing the seven transducers to individually separate and distinct focal points would not create the desired cumulative temperature rise, thereby destroying the intent, purpose or function of the Watmough et al. reference.

Together Anderson et al., Iinuma and Watmough et al. do not provide any motivation, suggestion or teachings for having "...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct locations for each individual ultrasound emitting element to form a lesion..." as

required in claims 1-8. Therefore, the rejection of claims 1-3 as being unpatentable over Anderson et al. in view of Iinuma and further in view of Watmough et al. should be withdrawn.

In addition, Anderson et al., Iinuma and Watmough et al. do not provide any motivation, suggestion or teachings for having an “...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound transducer element...” as required in claims 9-20. Therefore, the rejection of claims 9-12, 14 and 15 as being unpatentable over Anderson et al. in view of Iinuma and further in view of Watmough et al. should be withdrawn.

2. In the Office Action, claims 4, 6-8, 13, 16 and 18-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 (“Anderson et al.”) in view of U.S. Pat. No. 5,448,994 (“Iinuma”) and further in view of U.S. Pat. No. 4,646,756 (“Watmough et al.”) as applied to claims 1 and 9 above, and further in view of U.S. Pat. No. 5,413,550 (“Castel”). This rejection is respectively traversed based on the following remarks.

Like Anderson et al., Iinuma and Watmough et al., Castel also does not provide any motivation, suggestion or teachings for having “...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct locations for each individual ultrasound emitting element to form a lesion...” as required in claims 1-8. Therefore, the rejection of claims 4 and 6-8 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Watmough et al. and further in view of Castel should be withdrawn.

In addition, Castel also does not provide any motivation, suggestion or teachings for having an “...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and

focused at separate and distinct locations for each individual ultrasound transducer element..." as required in claims 9-20. Therefore, the rejection of claims 13, 16 and 18-20 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Watmough et al., and further in view of Castel should be withdrawn.

3. In the Office Action, claims 5 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 ("Anderson et al.") in view of U.S. Pat. No. 5,448,994 ("Iinuma") and further in view of U.S. Pat. No. 4,646,756 ("Watmough et al.") as applied to claims 1 and 9 above, and further in view of U.S. Pat. No. 6,626,855 ("Weng et al."). This rejection is respectively traversed based on the following remarks.

Like Anderson et al., Iinuma and Watmough et al., Weng also does not provide any motivation, suggestion or teachings for having "...an ultrasound emitting member having a plurality of individual ultrasound emitting elements spaced from one another, the ultrasound emitting elements being actuatable to emit ultrasound energy a predetermined distance outwardly from an active surface whereby the ultrasound energy is focused within tissue of the patient at separate and distinct locations for each individual ultrasound emitting element to form a lesion..." as required in claims 1-8. Therefore, the rejection of claim 5 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Watmough et al., and further in view of Weng should be withdrawn.

In addition, Weng also does not provide any motivation, suggestion or teachings for having an "...ultrasound emitting member comprising an active face adapted for positioning adjacent an area of tissue, the active face carrying one or more rows of spaced apart ultrasound transducer elements, the ultrasound transducer elements selectively, independently actuatable to emit focused ultrasound energy focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound transducer element..." as required in claims 9-20. Therefore, the rejection of claim 17 as being unpatentable over Anderson et al. in view of Iinuma, further in view of Watmough et al., and further in view of Weng should be withdrawn.

4. In the Office Action, claims 21-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,562,900 ("Anderson et al.") in view of U.S. Pat. No. 5,413,550 ("Castel") and further in view of U.S. Pat. No. 4,646,756 ("Watmough et al."). This rejection is respectively traversed based on the following remarks.

Anderson et al., Castel and Watmough et al. do not provide any motivation, suggestion or teachings for "...focusing the ultrasound energy with the selected one or more of the ultrasound emitting elements so that the ultrasound energy is focused a predetermined distance from the active face and focused at separate and distinct locations for each individual ultrasound emitting element..." as required in claims 21-27. Therefore, the rejection of claims 21-27 as being unpatentable over Anderson et al. in view of Castel and futher in view of Watmough et al. should be withdrawn.

Claims 1-27 remain pending in the application and are believed to be in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

A petition to extend the time for response to the Office Action dated November 25, 2005 for three (3) months from February 25, 2006 to May 25, 2006 accompanies this amendment. Please charge the appropriate extension fee to Deposit Account No. 13-2546.

A supplemental information disclosure statement accompanies this amendment. Please charge the appropriate fee to Deposit Account No. 13-2546.

If the Examiner comes to believe that a telephone conversation may be useful in addressing any remaining open issues in this case, the Examiner is urged to contact the undersigned agent at 763-391-9867.

Please charge any additional required fees or credit any overpayment to Deposit Account No. 13-2546.

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By 

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